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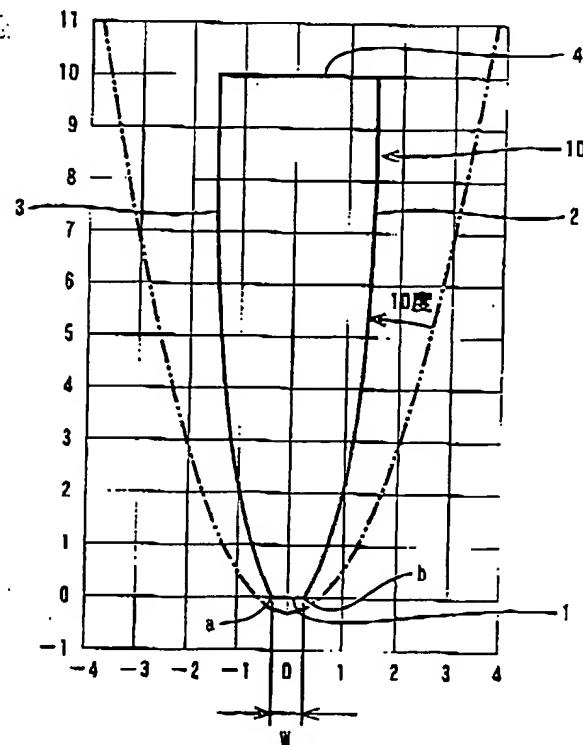
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(54) Title: LIGHT GUIDE AND IMAGE READER

(54) 発明の名称: 導光体および画像読み取り装置



(57) Abstract: [PROBLEMS] A document surface is illuminated efficiently by utilizing the characteristics of a compound paraboloid condenser (CPC) reversely to convert scattering light from some limited area over the entire angle into radiation light limited to a specified exit angle thereby minimizing spread of light. [MEANS FOR SOLVING PROBLEMS] In a light guide (10) arranged such that a light entering from the end face exits from an exit face (4) provided along the longitudinal direction while reflecting off the inner surface, a cross-sectional shape orthogonal to the longitudinal direction has two parabolas (2, 3) facing each other, a segment (bottom face) (1) connecting the focal points (a, b) of two parabolas (2, 3), and a segment corresponding to the exit face (4). A scattering pattern of white ink is formed on the segment (bottom face) (1) connecting the focal points (a, b).

(57) 要約: 【課題】複合放物面集光器(CPC)の特性を逆に利用し、ある限られたエリアからの全角に及ぶ散乱光を、所定の出射角に限定された放射光に変換し、光の広がりを最低限に抑えること、原稿面を効率良く照らす。【解決手段】端面から入射した光を内面で反射させながら長さ方向に沿って設けた出射面4から出射せしめるようにした導光体10において、長さ方向に直交する方向の断面形状は、対向する2つの放物線2, 3と、2つの放物線2, 3の焦点a, bを結ぶ線分(底面)1と、出射面4に相当する線分とを有する。焦点a, bを結ぶ線分(底面)1に、白色インクからなる散乱パターンを形成する。

端面から入射した光を内面で反射させながら長さ方向に沿って設けた出射面4から出射せしめるようにした導光体10において、長さ方向に直交する方向の断面形状は、対向する2つの放物線2, 3と、2つの放物線2, 3の焦点a, bを結ぶ線分(底面)1と、出射面4に相当する線分とを有する。焦点a, bを結ぶ線分(底面)1に、白色インクからなる散乱パターンを形成する。

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BJ, CP, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG..

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## INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2004/008621

## A. CLASSIFICATION OF SUBJECT MATTER

Int.Cl' G02B6/00, H04N1/04, H04N1/028, F21V8/00

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl' F21V8/00, G02B5/00-5/136, G02B6/00-6/43, G02B25/00-25/02,  
G02F1/1335-1/13357, G06T1/00, G09F9/00, G09F13/00-13/02,  
H04N1/00-1/028

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Jitsuyo Shinan Koho 1922-1996 Toroku Jitsuyo Shinan Koho 1994-2004  
Kokai Jitsuyo Shinan Koho 1971-2004 Jitsuyo Shinan Toroku Koho 1996-2004Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
JICST (JOIS)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JP 2001-268320 A (Nippon Sheet Glass Co., Ltd.), 28 September, 2001 (28.09.01), Par. Nos. [0021], [0022], [0034] to [0039]; Figs. 2, 6 & US 2001-35986 A1 & CN 1314614 A	1-4
A	WO 1997/20169 A1 (PHYSICAL OPTICS CORP.), 05 June, 1997 (05.06.97), Column 24, lines 24 to column 25, line 7; column 33, lines 7 to 22; Figs. 13, 20 & US 5629996 A1 & US 6028535 A1 & CA 2237069 A & EP 864065 A	1-4

 Further documents are listed in the continuation of Box C. See patent family annex.

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Date of the actual completion of the international search  
03 August, 2004 (03.08.04)Date of mailing of the international search report  
17 August, 2004 (17.08.04)Name and mailing address of the ISA/  
Japanese Patent Office

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International application No.

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## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JP 2001-135116 A (Visteon Global Technologies, Inc.), 18 May, 2001 (18.05.01), Par. Nos. [0017] to [0019]; Fig. 1 & EP 1085256 A	1-4
A	JP 5-313005 A (Pioneer Electronic Corp.), 26 November, 1993 (26.11.93), Par. Nos. [0013] to [0018]; Fig. 1 (Family: none)	1-4